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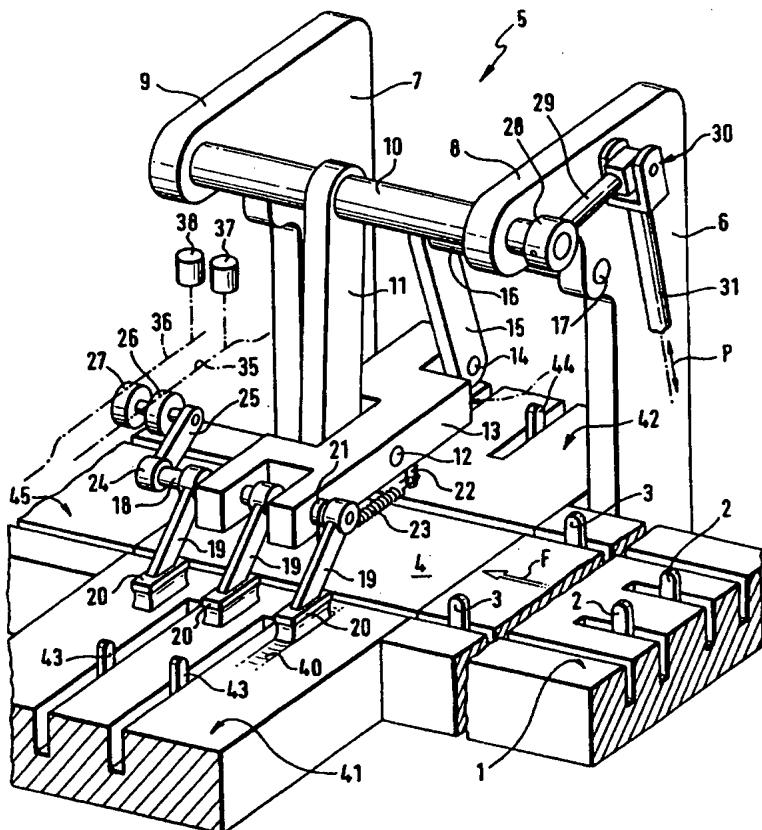
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B43M 3/04, B65H 5/16		A1	(11) International Publication Number: WO 99/65707 (43) International Publication Date: 23 December 1999 (23.12.99)
(21) International Application Number:	PCT/IB99/01171		(81) Designated States: CA, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
(22) International Filing Date:	27 May 1999 (27.05.99)		
(30) Priority Data:	198 27 235.9	18 June 1998 (18.06.98)	DE Published <i>With international search report.</i>
(71) Applicant (<i>for all designated States except US</i>):	BELL & HOWELL GMBH [DE/DE]; Gruner Weg 8, D-61169 Friedberg (DE).		
(72) Inventors; and			
(75) Inventors/Applicants (<i>for US only</i>):	STING, Martin [DE/DE]; Oberlindau 77, D-60323 Frankfurt (DE). BRAUNEIS, Axel [DE/DE]; Kirchgasse 30, D-35516 Munzenberg (DE).		

(54) Title: MAIL-PROCESSING MACHINE

(57) Abstract

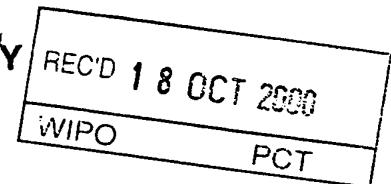
In the case of a mail-processing machine having a conveying path (1) which contains a circulating conveying chain and conveys onto a handling station (5), easy changeover to a variety of processing tasks and good adaptability to constricted space conditions are achieved in that, by a switchable actuating arrangement, manipulator fingers (19) articulated on a manipulator hand (13), in the handling station (5), can be switched both into the operating position both for the forward stroke of the manipulator hand and for the return stroke of the manipulator hand and into the return position both for the return stroke of the manipulator hand and for the forward stroke of the manipulator hand. Free through-passage-channel areas (32, 33) for sheet like article and sets thereof which are to be processed further or are to be inserted into envelopes are provided in the handling station, not only with regard to the direction (F) from the feeding conveying chain and to a laterally adjacent first processing arrangement but also in the opposite direction perpendicular to the feed direction of the first conveying chain.



FOR THE PURPOSES OF INFORMATION ONLY

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EE	Estonia						



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1174/79 PCT	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/IB99/01171	International filing date (day/month/year) 27/05/1999	Priority date (day/month/year) 18/06/1998	
International Patent Classification (IPC) or national classification and IPC B43M3/04			
Applicant BELL & HOWELL GMBH et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheets.

~~CORRECTED~~

~~VERSION~~

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 12/01/2000	Date of completion of this report 16.10.2000
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Findeli, B Telephone No. +49 89 2399 2372



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB99/01171

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

2-14 as originally filed

1,1a-1b as received on 04/10/2000 with letter of 02/10/2000

Claims, No.:

1-11 as received on 04/10/2000 with letter of 02/10/2000

Drawings, sheets:

1/2,2/2 as originally filed

2. The amendments have resulted in the cancellation of:

the description, pages:
 the claims, Nos.:
 the drawings, sheets:

3. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB99/01171

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 1-11
	No:	Claims
Inventive step (IS)	Yes:	Claims 1-11
	No:	Claims
Industrial applicability (IA)	Yes:	Claims 1-11
	No:	Claims

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB99/01171

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1) Claim 1 is directed to a mail-processing machine comprising a manipulator provided with fingers having elements which engage with sheet-like articles or sets thereof so that the articles or sets are moved to the right side of a base plate.

Such a mail-processing machine is known from the closest prior art document US-A-5 284 004.

The subject-matter of claim 1 differs from the mail-processing machine disclosed in the closest prior art primarily in that the elements also engage the sheet-like articles or sets thereof so that the articles or sets are moved to the left side of the base plate.

Thereby, double acting manipulator fingers are provided.

The technical problem to be solved by the application was therefore to configure a mail-processing machine such that a variety of processing steps can be performed, and easy change over different processing tasks is achieved.

The solution to this problem is neither disclosed, nor suggested in the prior art cited in the search report (in the art, only single acting manipulator fingers are disclosed).

- 2) The dependent claims 2-11 define further embodiments and likewise meet the requirements of the EPC.

- 1 -

Description

Mail-processing machine

5

Technical Field

The invention relates to a mail-processing machine having a conveying path on which the upper reach of a circulating first conveyor, particularly a conveying chain, forms intermittently or continuously conveyed transport sections for sheet
10 like articles and feeds to a handling station such sheet like articles or sets thereof having been placed into said transport sections.

Related Art

In said handling station, a manipulator hand may be movable, by means of
15 a manipulator drive, over a base plate in a direction perpendicular to the conveying direction of the first conveyor, sheet like articles or sets thereof fed onto the base plate by the conveyor being moved by the manipulator hand, particularly by means of conveying fingers articulated on the manipulator hand, into a first processing arrangement, which is located alongside the base plate. The manipulator fingers
20 can be raised, for a return stroke, and lowered, for an operating stroke, in relation to the base plate by means of an actuating arrangement.

Mail-processing machines of this type having as a handling station an envelope-filling station or inserter, wherein manipulator fingers push the sheet like
25 articles or sets thereof, which are pushed onto the base plate of the insertion station by the conveyor, into the openings of envelopes, which are provided in the abovementioned first processing arrangement in synchronism with feeding of sheet like articles or sets of sheet like articles and in synchronism with the operation of the inserter, are well known in the art.

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~~It is also known for sheet like articles or sets thereof fed onto the base plate of /~~
~~/ an inserter station by a first conveying chain, to be allowed to advance up of an /~~

- 1 a -

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October 2, 2000

An example of a mail-processing machine of this kind is disclosed in US-A-5,284,004. This known mail-processing machine comprises a driven first conveyor defining a first conveyor path on which conveyed transport sections for sheet like articles or sets thereof are formed, said sheet like articles or sets thereof being placeable into said transport sections. At the end of the first conveyor path there is provided a handling station and, in the vicinity thereof, there is located a first processing arrangement in shape of envelope feeding and opening means. Thus, 10 the handling station of this known mail-processing machine is an inserter station. The handling station comprises a manipulator hand having articulated thereto manipulator fingers. The handling station further comprises a manipulator drive, a base plate and an actuating arrangement for actuating the manipulator fingers. The manipulator hand is moveable by the manipulator drive over the base plate in a direction perpendicular to the conveying direction on the first conveying path so that the sheet like articles or sets thereof, which are fed onto the base plate on the 15 first conveyor path, are moved by the manipulator fingers into the envelopes provided in the first processing arrangement, which is located along-side the base plate.

20

The manipulator fingers of the known inserter station are raisable and lowerable in relation to the base plate by the actuating arrangement and have pushing elements engagable with the sheet-like articles or sets thereof in a push-direction. The actuating arrangement for actuating the manipulator fingers is 25 operated in such manner that the manipulator fingers bare on the base plate during the advancement of the manipulator hand and, during this operating stroke, engage the sheet like articles or sets thereof for pushing them into envelopes, and are raised off from the base plate during retraction of the manipulator hand in a return stroke. Finally, the known device has free through-passage-channel areas for

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movement of said sheet-like articles or sets thereof in regions above the level of the base plate from the side of the first conveyor and also in direction to the first processing arrangement, i.e. in direction to the means for feeding envelopes and presenting such envelopes in opened condition.

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It is also known for sheet-like articles or sets thereof fed onto the base plate of an inserter station by a first conveying chain, to be allowed to advance up of an

AMENDED SHEET

Claims

1. A mail-processing machine comprising:
 - (a) an endless circulating, intermittently or continuously driven first conveyor (1, 2, 3);
 - (b) a handling station (5) positioned at the output side of said first conveyor; and
 - (c) a first processing arrangement (e.g. 41) located in the vicinity of said handling station;
 - (d) wherein said first conveyor has an upper reach defining a first conveyor path (1) and forming intermittently or continuously conveyed transport sections for sheet like articles or sets thereof, said sheet like articles or sets thereof being placeable into said transport sections;
 - (e) wherein said handling station (5) comprises a manipulator hand (13) having articulated thereto manipulator fingers (19); a manipulator drive, a base plate (4) and an actuating arrangement (26, 27, 35, 36, 37, 38) for actuating said manipulator fingers (19);
 - (f) wherein said manipulator hand (13) is movable by said manipulator drive over said base plate (4) in the direction perpendicular to the conveying direction of said first conveyor (1, 2, 3) so that sheet like articles or sets thereof fed onto the base plate (4) by said first

AMENDED SHEET

conveyor (1, 2, 3), are moved by said manipulator fingers (19) into said first processing arrangement (e.g. 41), which is located along side the base plate (4); and

- (g) wherein said manipulator fingers (19) are raisable and lowerable, respectively, in relation to the base plate (4) by said actuating arrangement (26, 27, 35, 36, 37, 38);
- (h) said manipulator fingers (19) having pushing elements (20) engagable with sheet like articles or sets thereof both in the pushing direction and the pulling direction;
- (i) said actuating arrangement (26, 27, 35, 36, 37, 38) being selectively switchable such that said manipulator fingers (19)
 - i) either bear on the base plate (4) during advancement of the manipulator hand (13) and are raised off from the base plate (4) during retraction of the manipulator hand (13);
 - ii) or are raised off from the base plate (4) during advancement of the manipulator hand (13) and bear on the base plate (4) during retraction of the manipulator hand (13); and
- (j) free through-passage-channel areas (32, 33, 34) for movement of said sheet like articles or sets thereof being formed in regions above the level of the base plate (4) of the handling station (5), not alone from the side (34) of the circulating first conveyor and in direction (32) to the first processing arrangement, but also to that side (33) of

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the base plate (4) which is opposite the side on which said first processing arrangement is positioned;

so that the sheet like articles or sets thereof may be moved either to the right side or to the left side of the base plate (4).

2. The mail-processing machine according to claim 1, wherein a further processing arrangement (e.g. 42) is located opposite the processing arrangement (41), which is located alongside the base plate (4), on the other side (33) of the base plate (4).
3. The mail-processing machine according to claim 2, wherein at least one of the two mutually opposite processing arrangements (41, 42), which are positioned adjacent to the base plate (4) and sidewise perpendicularly to the conveying direction of the first conveying path (1), contains a second conveyor (41, 42) with a conveying direction perpendicular to the first-mentioned conveying path (1).
4. The mail-processing machine according to claim 3, wherein the conveying direction of the or each arrangement containing said conveyor can be reversed by reversing the drive.
5. The mail-processing machine according to claim 1, wherein at least one of the mutually opposite processing arrangements (41, 42), which are positioned adjacent to the base plate (4) and sidewise perpendicularly to the

AMENDED SHEET

conveying direction (F) of the first conveying path (1), is an operating station for providing open envelopes, in particular with an intermittently driven gripper-chain path, which, or each of which, interacts with the handling station as an inserter station for the sheet like articles or sets thereof which have been conveyed up by the first conveying path (1).

6. The mail-processing machine according to claim 1, wherein the base plate (4) has slits passing through it, said slits extending in the conveying direction (F) of the first conveying path (1) serving for guiding therein conveying fingers (3) of the first conveying chain or of an auxiliary conveying chain, said conveying fingers (3), when the manipulator fingers (19) of the handling station (5) have been raised, convey sheet like articles or sets thereof from the base plate to an additional processing arrangement, which adjoins the base plate (4) on that side which is opposite the side from the first conveying path (1, 2, 3).
7. The mail-processing machine according to claim 6, wherein the additional processing arrangement contains an additional conveyor, in particular conveying chain.
8. The mail-processing machine according to claim 6, wherein the further processing arrangement contains a further processing station, in particular an inserter station.

AMENDED SHEET

9. The mail-processing machine according to claim 1, wherein at least one of its conveying chains has a continuously driven chain line and an intermittently driven chain line, the respective conveying fingers (2, 3) of the chain lines running on different tracks, such that the conveying fingers (3) of the respective intermittently operated chain line, which are moved at a greater conveying speed in intermittent operation, receive sheet like articles or sets thereof from the conveying transport section of the continuously operated chain line.

10. The mail-processing machine according to claim 1, wherein the actuating arrangement (26, 27, 35, 36, 37, 38) contains guide follower means (26, 27), which are connected to a shaft (18) mounting the manipulator fingers (19) on the manipulator hand (13), and which make contact with a switch-over guide rail arrangement (35, 36, 37, 38).

11. The mail-processing machine according to claim 1, wherein the manipulator drive of the handling station (5) has a three-link mechanism, which comprises a framework-mounted actuating lever (11), which is driven to produce oscillating pivoting movements, a framework-mounted actuating link (15) and the manipulator hand (13), whereby the actuating link (15) is pivotably connected to one manipulator hand end and the manipulator fingers (19) are articulated at the other manipulator hand end, while the actuating lever (11) is articulated on the manipulator hand (13) between the points of articulation of the latter for the actuating link (15) and the manipulator fingers (19), and the three-link mechanism is dimensioned, and the points of articulation on the framework are selected in such way that, during a substantial part of the operating stroke and of the return stroke of

ANNEALED

the manipulator hand (13), the point of articulation of the manipulator fingers moves essentially parallel over the base plate (4).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 1174/79 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB99/01171	International filing date (day/month/year) 27/05/1999	Priority date (day/month/year) 18/06/1998
International Patent Classification (IPC) or national classification and IPC B43M3/04		
Applicant BELL & HOWELL GMBH et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 12/01/2000	Date of completion of this report 07.09.2000
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Findeli, B Telephone No. +49 89 2399 2372



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB99/01171

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-14 as originally filed

Claims, No.:

1-11 as originally filed

Drawings, sheets:

1/2,2/2 as originally filed

2. The amendments have resulted in the cancellation of:

the description, pages:
 the claims, Nos.:
 the drawings, sheets:

3. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB99/01171

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 2-4,7-9,11
	No:	Claims 1,5,6,10
Inventive step (IS)	Yes:	Claims
	No:	Claims 2-4,7-9,11
Industrial applicability (IA)	Yes:	Claims 1-11
	No:	Claims

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB99/01171

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1) Reference is made to the following document:

D1: US-A-5 284 004 (METZLER KURT O) 8 February 1994 (1994-02-08)

- 2) The subject-matter of claims 1,5,6,10 is not new.

The subject-matter of claims 1,5,6,10 is known from document D1, see in particular Fig. 1 and column 2, line 24 - column 3, line 50.

- 3) Dependent claims 2-4, 7-9,11 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:

In claims 2-4, 7-9,11, slight constructional change in the mail-processing machine are defined which should come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of claims 2-4, 7-9,11 lacks an inventive step.

Re Item VII

Certain defects in the international application

- 1) Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (see document D1) being placed in a preamble

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB99/01171

(Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).

- 2) The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 3) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

TENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION
(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 16 June 2000 (16.06.00)	To: Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C. 20231 ETATS-UNIS D'AMERIQUE
International application No. PCT/IB99/01171	Applicant's or agent's file reference 1174/79 PCT
International filing date (day/month/year) 27 May 1999 (27.05.99)	Priority date (day/month/year) 18 June 1998 (18.06.98)
Applicant STING, Martin et al	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

12 January 2000 (12.01.00)

in a notice effecting later election filed with the International Bureau on:

2. The election was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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INVENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

To:

KUHNEN & WACKER
 Alois-Steinecker-Strasse 22
 D-85354 Freising
 ALLEMAGNE

Date of mailing (day/month/year) 04 October 2000 (04.10.00)
Applicant's or agent's file reference 1174/79 PCT
International application No. PCT/IB99/01171

IMPORTANT NOTIFICATION

International filing date (day/month/year)
27 May 1999 (27.05.99)

1. The following indications appeared on record concerning: <input type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative				
Name and Address KUHNEN & WACKER Alois-Steinecker-Strasse 22 D-85354 Freising Germany	State of Nationality		State of Residence	
	Telephone No.			
	Facsimile No.			
	Teleprinter No.			
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input type="checkbox"/> the person <input type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence				
Name and Address KUHNEN & WACKER Alois-Steinecker-Strasse 22 D-85354 Freising Germany	State of Nationality		State of Residence	
	Telephone No. +49 8161/608-0			
	Facsimile No. +49 8161/608-100			
	Teleprinter No.			
	3. Further observations, if necessary: An agent has been appointed.			
4. A copy of this notification has been sent to: <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the International Searching Authority <input checked="" type="checkbox"/> the elected Offices concerned <input type="checkbox"/> the International Preliminary Examining Authority <input type="checkbox"/> other:				

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Ellen Moyse Telephone No.: (41-22) 338.83.38
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INTERNATIONAL SEARCH REPORT

Intern. Application No.

PCT/IB 99/01171

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 6 B43M3/04 B65H5/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B43M B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 195 00 746 A (BELL & HOWELL CO) 18 July 1996 (1996-07-18) ---	
A	US 5 284 004 A (METZLER KURT O) 8 February 1994 (1994-02-08) ---	
A	US 3 965 644 A (STOCKER LESTER H) 29 June 1976 (1976-06-29) -----	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

30 September 1999

07/10/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

DIAZ-MAROTO, V

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internatinal Application No

PCT/IB 99/01171

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
DE 19500746	A 18-07-1996	NONE		
US 5284004	A 08-02-1994	CA DE DE WO EP JP	2092329 A 4116708 A 59203906 D 9220532 A 0552319 A 6501217 T	25-09-1994 26-11-1992 09-11-1995 26-11-1992 28-07-1993 10-02-1994
US 3965644	A 29-06-1976	CA	1072924 A	04-03-1980

PATENT COOPERATION TREATY
PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 1174/79 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 99/01171	International filing date (day/month/year) 27/05/1999	(Earliest) Priority Date (day/month/year) 18/06/1998
Applicant BELL & HOWELL GMBH et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.
 It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
 - a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
 - b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :
 - contained in the international application in written form.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority in written form.
 - furnished subsequently to this Authority in computer readable form.
 - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
2. **Certain claims were found unsearchable** (See Box I).
3. **Unity of invention is lacking** (see Box II).
4. With regard to the **title**,
 - the text is approved as submitted by the applicant.
 - the text has been established by this Authority to read as follows:
5. With regard to the **abstract**,
 - the text is approved as submitted by the applicant.
 - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is Figure No. 1
 - as suggested by the applicant.
 - because the applicant failed to suggest a figure.
 - because this figure better characterizes the invention.

None of the figures.

INTERNATIONAL SEARCH REPORT

[REDACTED] national application No.
PCT/IB 99/01171

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

LINE 1 -...PATH(1)
LINE 2 -...STATION(5)
LINE 5 -...FINGERS(19)...HAND(13)...STATION(5)
LINE 9 -...AREAS(32,33)
LINE 12-...DIRECTION(F)

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 99/01171

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B43M3/04 B65H5/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B43M B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 195 00 746 A (BELL & HOWELL CO) 18 July 1996 (1996-07-18) ----	
A	US 5 284 004 A (METZLER KURT O) 8 February 1994 (1994-02-08) ----	
A	US 3 965 644 A (STOCKER LESTER H) 29 June 1976 (1976-06-29) -----	

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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INTERNATIONAL SEARCH REPORT

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			WO 9220532 A	26-11-1992	
			EP 0552319 A	28-07-1993	
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